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Notes on Birds and the Spruce Bark-beetle in the White River and Grand Mesa National Forests in Colorado, Aug. 1944

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In the course of a trip by automobile from Steamboat Springs to Skyway, Colo. on August 23, 1944 opportunity was afforded to observe the work of woodpeckers against the spruce bark-beetle (Dendroctonus englemannii), in the White River Forest. In this area south of Hayden, Colo. there is a heavy infestation that is threatening all mature stands of spruce and areas of discolored trees are encountered at frequent intervals.

At a point near the top of the divide between the Williams Fork and the White River, observations were made, in company with J. F. Welch, on the feeding habits of what was first thought to be an alpine three-toed woodpecker but which later judgment leads me to think was a hairy woodpecker. This bird was observed working about 50 feet from the ground in a recently dead Engleman's spruce of about two feet in diameter. The ground immediately about the base of the tree was covered with chips of bark removed by earlier bird work and the tree itself showed extensive areas that had been worked over thoroughly.

Since the beetles are found immediately beneath the rather thin bark there is little need for the woodpeckers to resort to deep excavations. In fact the technique used seems to fit the particular needs in that the birds employ side strokes which dislodge the flaky chips of bark and soon expose the galleries containing the adult beetles and their larvae or pupae. Periodically the bird would stop and center its attention at some point where apparently food had been exposed. In customary woodpecker fashion the bird eventually reached the top of the tree whereupon it would fly to a point near the base of another and begin to work its way up.

In the area inspected on the White River Forest every heavily infested spruce had its ring of bark chips around the base, evidence of woodpecker work that had been going on for some time. The trees themselves also revealed the clean surfaces of under bark after the outer scales had been removed by the birds.

On Grand Mesa I had opportunity to discuss the problem at some length with Mr. George R. Struble, entomologist of the Bureau of Entomology and Plant Quarantine, who had been assigned to the area for some time. Inspection also was made of several of the control tests he is conducting, and witness the degree of infestation present on badly affected trees. Struble told me that concentrations as great as 400 adult or immature beetles have been recorded to the square foot of bark. With such concentration any normal woodpecker population would have difficulty in making an appreciable impression particularly over the extensive areas now covered by the infestation. Among the notes of interest picked up at Grand Mesa was an observation by Struble in connection with one of his experiments in which he used a spray conveying DDT on an infested tree. At about breast height he had circled the trunk with a screen in the shape of an inverted cone to catch any beetles that might be affected by the spray. A considerable number of beetles did accumulate in the screen and on one of his trips Struble observed what appears to have been a hairy woodpecker sitting in the cone busily consuming the dead or affected beetles.

An hour's observation in one of the experimental areas disclosed, within a radius of about 100 yards two hairy woodpeckers and one downy that were spending all of their time working on the infested trees. One hairy was observed at the minimum operating distance of 9-power binoculars and it was clearly seen to remove several pupae or larvae. This bird travelled from tree to tree but was observed to avoid, or stop only momentarily, on the smaller trees not heavily infested with beetles. Other birds were feeding beneath infested trees and it is possible that they too were feeding on Dendroctonus knocked down by the woodpeckers or falling to the ground as they emerged from their exit burrows. Those observed in such situations were the red-breasted nuthatch, brown creeper, hermit thrush, gray-headed junco and long-tailed chickadee.

Mr. Struble stated that according to his observations woodpeckers were the most evident and effective natural enemies of the spruce bark-beetle at the present time; he adds, however, that their number is too limited to have much effect on the aggregate beetle population.

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